BY ORDER OF THE COMMANDER
AIR COMBAT COMMAND

AIR FORCE INSTRUCTION 21-103

AIR COMBAT COMMAND SUPPLEMENT
ADDENDUM I

9 FEBRUARY 2011

Maintenance

EQUIPMENT INVENTORY, STATUS AND UTILIZATION REPORTING SYSTEM/RC-135S MINIMUM ESSENTIAL SUBSYSTEM LIST (MESL)

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This MESL compliments AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting.* It applies to all RC-135S ACC units, to include deployed locations. This Addendum does not apply to Air National Guard or Air Force Reserve Command units and members. Maintain official records created as a result of prescribed processes in accordance with (IAW) AFMAN 33-363, *Management of Records*, and dispose of records IAW the AF Records Disposition Schedule located at the AF Records Information Management System link **https://www.my.af.mil/gcss-af61a/afrims/afrims**/. Contact supporting records managers as required. Send recommended changes or comments on AF Form 847, *Recommendation for Change of Publication,* to the OPR at HQ ACC/A4C, 219 Dodd Blvd, Langley AFB VA 23665.

SUMMARY OF CHANGES

This publication is substantially revised and must be completely reviewed. Mission columns have been changed. Numerous systems Work Unit Codes (WUCs) have been added or deleted. Remarks are incorporated for each applicable WUC and have replaced notes to better clarify mission capability requirements.

1.**General.**The MESL is the basis of status reporting IAW AFI 21-103. MESLs lay the ground work for reporting the status of aircraft availability. They list the minimum essential systems and subsystems that must work on an aircraft for it to perform specifically assigned unit wartime,

training, test or other missions. MESLs are not comprehensive WUC lists and are not intended to mirror Minimum Equipment
Lists. Mission Ready Available (MRA) is used in readiness Status of Resources and Training System (SORTS) reporting only and denotes Mission Capable (MC) aircraft capable of being configured for a contingency mission IAW COMACC OMNIBUS Plan.
1.1.Qualifying notes are used to define aircraft exceptions and help explain complex degraded mission systems.
1.2.Aircraft status for generation and deployment: The goal is to generate or deploy Fully Mission Capable (FMC) aircraft, recognizing status actually achieved may be less than FMC. A Not Mission Capable (NMC) aircraft may be deployed provided it is safe for flight and can be configured and generated to MRA status at an employment site.
1.3.All ACC units will generate, or deploy and regenerate, using ACC MESLs. Major Command differences in MESLs are acknowledged. Upon actual deployment to another MAJCOM theater, the gaining MAJCOM has the responsibility to resource and specify the unit's requirements and resource the differences in support/mission equipment.
1.4.Reading the MESL. A MESL is read by comparing the systems stated by WUC against the Full System List (FSL) and all applicable Basic Systems Lists (BSLs) across the page. Each unit's Design Operational Capability (DOC) statement determines applicability of BSL columns. The aircraft MESLs incorporate all ACC assigned aircraft and therefore it is important to compare only those columns listed in the MESL which are applicable to the unit's assigned aircraft. For example, units with CC (wartime) coded aircraft would determine and report status using only the FSL and BSL columns related to their DOC statement. Units with TF (training) coded aircraft would determine and report status using only the FSL and TNG columns , and units with CB (test) coded aircraft would determine and report status using only the FSL and TST columns. Units with multiple coded aircraft will ensure status is reported using the MESL columns appropriate to the individual aircraft assignment code.

Table 1. RC-135S MESL

WUC	Item	Remarks	FSL	RT
11000	Airframe	None	X	X
12000	Fuselage Compartments	None	X	X
13000	Landing Gear	None	X	X
13CC0	Anti-Skid Dual Control Valve Mark III	Pilot's or copilot's position must be operational.	X	X
13EB0	Brake Electrical Unit	Pilot's or copilot's position must be operational.	X	X
13KAC	Rudder Pedal Steering Linear Actuator	Flyable with linear actuator extended. If unable to reset linear actuator electrically, rudder pedal input to nose wheel steering may be reduced.	X	X
14000	Flight Controls	None	X	X
14DAA	Stabilizer Trim Control Switch	Aircraft flyable with at least one unit operational.	X	X
27000	Turbofan Power plant (F108)	None	X	X
27CA0	Ignition System	Multi-unit system. Aircraft flyable with at least one unit per engine operational.	X	X
27CBF	Jet Fuel Starter (JFS)	None	X	
27DAN	Meter-Fuel Flow	Aircraft flyable if one inoperative provided all other indications for affected engine are operating. (Corresponding engine's fuel flow may be displayed on the Control Display Unit (CDU)/Multi-Function Display (MFD).)	X	X
27HA0	Fuel and Variable Vane System	Physical monitoring of engine status is required for each inoperable Power Management Control.	X	
41000	Air Conditioning, Pressurization and Surface Ice Control	None	X	X

41120	Pressurization	Aircraft flyable if normal air conditioning or alternate pressurization operable. Automatic or manual mode must be operable.	X	X
4121A	Temperature Selector	Automatic or manual mode must be operational.	X	X

WUC	Item	Remarks	FSL	RT
41140	Windshield Rain Removal System	Aircraft flyable with one wiper operational.	X	X
41350	NESA Anti-ice System	Both Pilot and Copilot #1 and #2 windows must operate.	X	X
41430	Electronic Cabinet Blower System	If electronic cabinet cooling overheat light illuminates, fans must be operational to be mission capable.	X	X
42000	Electrical Power Supply	Aircraft is flyable with 2 operational systems.	X	X
42148	25 Amp Battery TRU 2-165	Battery Charging TR (Main/JFS). Aircraft flyable with at least one unit operational.	X	X
44140/50/60	Warning Light Assemblies	None	X	X
44152	Fuel Pressure Warning Light	None	X	
44170	Lighting Systems Components	None	X	
44211	Nose Landing Light	Either the nose landing light or one of the wing landing lights must operate.	X	X
44212	Taxi Lights	One taxi light or the terrain clearance light must operate for night operations.	X	X
44228	ARR Receptacle Lighting	Required for night A/R only.	X	X
44233	Navigation Lights	Must Have Both Wing And One Operational Tail Navigation Light.	X	X
44250	Anti-Collision High Intensity (Strobe) Lights	Upper anti-collision strobe light must be operable.	X	X
44263	Wing Landing Lights	Either the nose landing light or one of the wing landing lights must operate.	X	X
44266	Wing Landing Light (Retractable)(Terrain)	None	X	
45000	Hydraulic and Pneumatic Power Supply	None	X	X
46000	Fuel System	None	X	X
46117	Transfer Valve #10 (No. 1 Reserve)	None	X	
46283	Transfer Valve #17 (No. 4 Reserve)	None	X	
46316	Override Pump	Not required if center wing fuel is not required for mission accomplishment.	X	X
46628/48/56	Engine Manifold Valves	Aircraft flyable if one valve failed in the OPEN position. (Pull circuit breaker.)	X	X
469A0	Air Refueling Receiver Electrical System	As required for mission accomplishment.	X	X
47000	Oxygen System	None	X	X
47130	Oxygen Regulators	All occupied positions must have operable regulator.	X	X

WUC	Item	Remarks	FSL	RT
47200	Oxygen Quantity Panel Assembly (RC/TC-135)	Totalizer may be inoperable as long as individual converter quantities are readable. Supply low caution light not required.	X	X
49000	Miscellaneous Utilities	Required for safety of flight and sufficient for flight monitoring, and crew warning.	X	X
51000	Instruments, General	For instruments with both analog and digital indication, either indication for flyable aircraft.	X	X
51A00	Flight Director System (RGA-Rotation Go-Around)	May be inoperable as long as Aircraft Performance Computer system is operational. Must be sufficient at pilot or copilot positions to monitor aircraft position, performance, and maintain control.	X	X
51BD0	Angle of Attack (AOA) Indication	Pilot's or copilot's position must be operational. Operating AOA must have operational anti-ice on associated transmitter.	X	X
51BE0	Angle of Attack Transmitter	Pilot's or copilot's position must be operational. Operating AOA must have operational anti-ice on associated transmitter.	X	X
51K00	Digital Air Data Computer (ADC) System	ADC1 or ADC2 may be inoperative provided that the standby ADC is fully operational. The FCAS ADC must be operational.	X	X
51L00	Flight Data Recorder	Only required when flying with PAX.	X	X
51P00	Electronic Flight Instrument System (EFIS)	Aircraft flyable with loss of one Multi Function Display at	X	X

		either pilot or copilot position provided the navigator's Keyboard Display Unit (KDU) is operational. (Navigator KDU can display either MFD or PFD mode through selection of the MFD/PFD mode switch.)		
51R00	Electronic Standby Indicating System (ESIS)	ADC1 or ADC2 may be inoperative provided that the standby ADC is fully operational. The FCAS ADC must be operational.	X	X
51S00	Wind Shear/SCAT System (RC/TC-135)	None	X	X
51SAA	Aircraft performance Computer	Aircraft flyable with at least one unit operational.	X	X
51W00	Fuel Quantity Indicating System (RC/TC-135)	Aircraft flyable with reserve tank indication inoperative as long as tank quantity can be verified prior to takeoff.	X	X
51WAA	Signal Conditioning Unit (SCU)	Tank quantities must be manually entered in mal-functioning tank to get accurate gross weight and CG.	X	X
51Y00	Angle-Of-Attack Speed Indexer Lights	None	X	
51113	Accelerometer (G Meter)	None	X	

WUC	Item	Remarks	FSL	RT
5118A	Altimeter (NAV's)(Reduced Vertical Separation)	None	X	
5118D	Altitude Alerter	Aircraft flyable with at least two operational systems.	X	X
51310	Engine Instruments	Must have analog or digital.	X	X
51421	LH Flap Position Indicator	One flap Indicator may be inoperative provided:(1) flaps operate normally; (2) verification of flap position can be made prior to each take off and landing.	X	X
51431	RH Flap Position Indicator	One flap Indicator may be inoperative provided:(1) flaps operate normally; (2) verification of flap position can be made prior to each take off and landing.	X	X
51840	Free Air Temperature/Outside Air Temperature (OAT) Gauge	Aircraft flyable if temperature available on Altitude Alerter.	X	X
51851	Cabin Altitude Indicator	Sufficient to maintain cabin altitude below 12,000 feet.	X	X
51854	Cabin Altitude Gauge (Nav Station)	Required only if operating via manual cabin pressure control. Gauge is not required if the cabin pressure warning function of the Altitude Alerter is operational.	X	X
52A00	AN/ASW-48 Digital Autopilot	Roll, pitch and altitude hold required.	X	X
52AK0	Vertical Gyro	Aircraft flyable as long as AN/ASN-121 provides attitude reference for autopilot system.	X	X
52200	Flight Control Augmentation System/ Engine Failure Assist System (EFAS)	None	X	X
52410	N-1 Compass	None	X	X
61D00	HF Communications Set (AN/ARC-190)	Minimum two systems operational for oceanic operations.	X	X
62400	AN/ARC-210 VHF/UHF Radio	FD-1 or FD-3 must be operational.	X	X
635A0	UHF ARC-171(V)	None	X	X
64160	Interphone System AN/AIC-18	All crewmembers must be able to transmit and receive on interphone. CALL function must be operable.	X	X
65000	Identification Friend or Foe (IFF) System	None	X	X
66A00	Emergency Avionics System (EAS)	None	X	
68000	SATCOM	HF Communications is fully operational. (As mission requirements dictate).	X	X
69900	Wideband Secure Voice KY-58 System	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
71000	Radio Navigation System	None	X	X
71AK0	Navigation Direction Finder	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
WUC	**Item**	**Remarks**	**FSL**	**RT**
71B00	VHF (Very High Frequency) Omni-directional Radio-range (VOR)/Locator Beacon (LOC)	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
71Z00	AN/ARN-118 Tactical Airborne Navigation (TACAN)	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
72000	Radar Navigation System	None	X	X
72BA0	AN/APN-242 Radar	Minimum of one RT required.	X	X
72V00	AL-101 Radar Low Range Altimeter	Pilot's system must be operational.	X	X

72700	Flight Management System (FMS)	None	X	X
727AA	Control Display Unit	Pilot or Copilot CDU and Navigator's CDU must be operational.	X	X
727AB	Navigation Computer Unit (NCU)	Minimum of one NCU operational.	X	X
727AD	Data Transfer Unit	None	X	
727B0	Embedded GPS/Inertial Navigation (LN-100)	None	X	X
73000	Enhanced Traffic Collision Avoidance System/Vertical Velocity Indicator (TCAS/VVI)	Minimum of one system operational. TCAS and VVI must be available on Pilot or Copilot's PFD.	X	X
76100*/ 84LE0**	HAWK Receiver System	None	X	
83A00*/ 84A00**	Operator Workstations (OWS)	As required for mission accomplishment.	X	X
83BE0*/ 84BS2**	Recording Systems	As required for mission accomplishment.	X	X
83BF0*/ 84BF0**	CB DFC (Digital FISINT Collection)	As required for mission accomplishment.	X	X
83BG0*/ 84BG0**	CBOSS (Optical Sensor System)	Required for optical collection.	X	X
83BGA*/ 84BGA**	TGE (Tactical Geo-location Electronics)	Minimum of main processor and one solver board.	X	X
83BGJ*/ 84BGJ**	L/R IR Sensor Array	Min of one IR sensor required per active side.	X	X
83BGM*/ 84BGM**	Integrated Core Processor	Baseline 4 only.	X	X

NOTES: * Baseline 3 /** Baseline 4

WUC	Item	Remarks	FSL	RT
83BGP*/ 84BGP**	LN100G	IR ZLG (zero lock gyro) required.	X	X
84BSZ**	LDR Processor	None	X	
83C00*/ 84C00**	Radio Frequency Distribution	Minimum of one side RF ranges of interest for collection.	X	X
83D00*/ 84D00**	Modular Devices (MRK)	Minimum of MSW100, MMX100 and SAC. As required for mission accomplishment.	X	X
83F00*/ 84F00**	Collection Receivers	As required for mission accomplishment.	X	X
83FER*/ 84FEE**	MMX100A Audio Distribution Multiplexer	None	X	X
83H00*/ 84H00**	Processors	As required for mission accomplishment.	X	X
84HAD**	Dual Processor (MPC,PEGASUS)	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
83HG0*/ 84HBA**	HCP (Hardware Control Processor)or TMP (Track Management Processor)	Mission capable if BP1 is operational and not performing another function.	X	X
84HGA**	REMOTE I/O (RIO)	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
83M00*/ 84M00**	Maintenance Position	As required for mission accomplishment.	X	X
83S00*/ 84S00**	Digital Data Distribution (DDS)	As required for mission accomplishment.	X	X
84SAA	Filer	None	X	X
83SBA*/ 84SBA**	System LAN Switch	Mission capable with one controller or one power supply.	X	X
84SE0	Nav/Time System	None	X	X
83TB0*/ 84TB0**	RSTA	None	X	
84V00**	JSS (Joint Search System)	As required for mission accomplishment.	X	X
84VB0**	BSS (Background Spectral Search)	Multi-unit system. Aircraft flyable with at least one unit operational.	X	X
83W00**	External Communications	Minimum of Air Com Term (ACT) or NABRE and one operational secure voice system.	X	X
84XB0**	Frequency Converters	None	X	X

NOTES: * Baseline 3 /** Baseline 4

WUC	Item	Remarks	FSL	RT
84Z00**	Quick Reaction Capability (QRC)	None	X	
91000	Emergency Equipment	None	X	X
96110	Personnel Equipment (Oxygen)	None	X	X

NOTES: * Baseline 3 /** Baseline 4

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 21-103, **http://ww/e-publishing.af.mil/pubfiles/af/21/afi21-103/afi21-103.pdf**, *Equipment Inventory, Status, and Utilization Reporting*

Abbreviations and Acronyms

ACC—Air Combat Command

BP1/2—Backup Processor 1/2

CG—Center of Gravity

ESIS—Electronic Standby Indicating System

FCAS—Flight Control Augmentation System

HQ—Headquarters

MAJCOM—Major Command

OPR—Office of Primary Responsibility

PFD—Primary Flight Display

RT—Reconnaissance, Tactical

SCAT—Speed Command of Attitude and Thrust

TNG—Training